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3. The third cause of an imperfect oxygenation of the blood is *the want of exercise.*

A person may have well-developed lungs, and live constantly in pure air; and yet, *without exercise*, his blood will be but half-oxygenated, and he will suffer consequent debility of body and mind.

A few simple propositions will place the relation in which we stand to active exercise, in a clear light.

1. Every muscular exertion is necessarily attended by a compression of the muscle exerted;—that is, every muscle in a state of tension is more compact, and, therefore, occupies less space, than when it is relaxed. The muscles are respectively surrounded by, or enclosed in, a membranous sheath or coat, just as the arm, finger, or other part is surrounded by its skin. This sheath is always so well lubricated that, although the different muscles are close-packed together, yet they slide upon each other without embarrassment. Of the rapidity with which they must play upon one another, we may form some conception in looking at a juggler's arms or a musician's fingers. Within these sheaths, (or *fascia*, as they are technically called,) the whole body of the muscle, when we exercise, is compressed; or, to use a familiar, but more expressive phrase, it is *squeezed.* This compression of the muscle sends out its blood, just as the compression of any flexible tube or cylinder would send out its contents. The blood, for a reason hereafter to be stated, can move only in one direction. In the general circulation, (as distinguished from the pulmonary,) the arterial blood moves outward towards the extremities. When it reaches the extremities it passes from the arteries, through capillary tubes of almost inconceivable fineness, into the veins, where, losing its arterial character, it becomes venous blood, and flows backwards to the heart. Hence the obvious effect of every muscular effort is to quicken the circulation of the blood.

2. The blood being the natural stimulus to the action of the heart, if more blood is received the stimulus is increased; and, of course, the pulsations of that organ are increased also, both

in frequency and force. The heart must throw out as much blood as it receives, and, when an increased volume is thrown into it by the compression of the muscles, its beat must be more rapid, and as the organ is more distended also, it must throw out more at each beat.

3. As the blood thrown from the right side of the heart has no place of escape, except into the lungs, and as this fluid is also the natural stimulus of the lungs, it follows that as the quantity of blood injected into these organs is increased, their motions also must be accelerated.

This statement has been or may be tested by every one for himself. Let a man, while sitting in a state of perfect repose at the bottom of the Bunker Hill monument, count the number of his pulsations per minute, and take note, as well as he can, of their force. Let him also note the number of his respirations per minute, and their depth,—that is, the quantity of air which he inhales at each breath; and then let him ascend the staircase, though at a moderate step, to its summit, and there compare the frequency and strength of his pulsations, and the number and fulness of his respirations, with what they were before he started, and how vastly will he find the latter to exceed the former. And so of any vigorous exercise. The whole philosophy of this is, that muscular exertion,—or, which is the same thing, muscular compression,—sends more blood to the heart; whereupon that engine increases the rapidity and length of its strokes, to propel the current forward towards the lungs; and then the lungs are inflated to their lowest depths to meet the increased demand of the blood for oxygen. And what is remarkable is, that we cannot, by any act of the will, force ourselves to deep and rapid breathing, for any considerable length of time, without exercise; nor can we prevent deep and rapid breathing, while engaged in strong muscular efforts. This is a natural operation, and can be effected only by using the appointed natural means.

Observe the breathing of a person long unused to exercise. If the capacity of the lungs is such that they would require one, two or more quarts of air for their *full* inflation, such a person while in a state of repose will inhale scarcely half a pint; and hence, will defraud himself of at least three fourths of the vital element which his system requires. An indolent person could enjoy a full measure of health and vigor, only on condition that the whole arrangement of his physical structure, and all the laws of nature which pertain to it, should be reversed for his accommodation.

It was stated above that while the lungs contain two sets of vessels for the blood,—one for its ingress, the other for its egress,—they contain but one set for the air. Hence, the air returns outward through the same passages by which it entered the lungs; or, to sacrifice dignity to expressiveness of phrase, *it goes out backwards.* The consequence of this is, that feeble and shallow breathing does little more than fill the larger air tubes and ventilate the upper part of the lungs. But the principal bulk of these organs lies lower down in the chest. Hence

the small quantity of air taken into the lungs by an indolent person, at each successive breath, reaches but a part of the blood which is flowing through them. The rest of the stream passes on, lifeless and corrupting. And hence too, that general paleness of hue, that insecurity of step, that threatening to sink or drop down while attempting to stand or sit upright, that feeling of necessity for some mechanical support around the body in order to maintain it in an erect posture, and that universal heaviness of motion, as though all the muscular bands were stretching instead of tightening, on the application of force. which characterize those who disdain manual labor, and look upon active exercise as derogating from personal dignity. To the eye of the physiologist or lover of nature, these signs of feebleness are more revolting than the deformity of a hump-back or a club-foot.

The reason why the blood, on a compression of the muscles, must be driven forward and not backward, is, that the veins are provided, at brief intervals along their whole length, with valves, which allow this fluid to pass only in one direction. It flows forward freely through these valves, but they shut to prevent its retrogression. How, except by some such mechanical contrivance, could the blood of a full-grown man, while he is in a standing posture, ascend for a distance of fifty inches from his feet to his heart? Without these valves, the weight of the whole column of blood would press upon its base;—and when we consider the meandering of its streams, and the fineness of the capillary tubes through which it must pass, a force sufficient to drive it upwards to the heart, unsupported by these valves, would be almost inconceivable. These valves, however, have no power to project the blood forward; they merely prevent it from falling back.

So far as the circulation of the blood is concerned, these facts show the difference between passive exercise, such as riding in a carriage or sailing in a boat, and the athletic exertions of manual labor or of gymnastic sports. Every jolt of a vehicle, of course, will drive the blood forward a little,—just as any fluid is agitated by the motion of the vessel containing it,—and the valves in the veins will prevent its falling back; but how miserable a substitute is this for that alternate compression and relaxation of the muscles, which sends the blood forward in successive and beautiful jets,—which also sends forward the whole mass of the blood, not allowing, *as is the case with all slothful, inactive persons*, any stagnant, noisome pool, or even particle, to remain behind to breed corruption and offence,—and which rewards with the priceless boon of health, the labors of the husbandman, the artisan or the sailor.

On the due oxygenation of the blood, and on its lively circulation through the system, depends another result, and one, too, of the most remarkable character in the whole animal organism. I refer to the growth of the body, and the constant reproduction of its tissues.

A vulgar opinion prevails that every part of the body of a man is changed once in seven years; so that, speaking of the

corporeal substance, it might be said that no part of our frame, however gray, or decrepit with age, we may appear, is more than seven years old. Whether this opinion may or may not be erroneous in one sense,—that is, whether a man who dies at a hundred, may not carry some atom, molecule or monad, to the grave, which he brought into life, is what we have no certain means of determining, though it is highly probable that he does not; but there can be no doubt that the saying is grossly incorrect, in making a general allowance of seven years for the renewal of the system. How many times must the skin of an infant who weighs but six or eight pounds at birth, be changed, in order to accommodate itself to the gradual enlargement of its owner, until he weighs a hundred and sixty or eighty pounds, —it being kept in mind that the skin has made a good "fit," during all the time! This adaptation of the envelope to the daily growth of the owner, is not effected by *stretching*, for whatever is stretched in one direction must be diminished in some other; but a square inch or square foot of the skin of an adult is heavier and thicker than that of a child. During the whole period of a child's growth, therefore how many times must this entire integument change, in every seven years, and even in a single year! The man most extravagant in his wardrobe prepares far fewer garments for his body, than nature prepares skins. And if the skin must be cast off and reproduced so many times, in order to adapt itself to the growth of the parts it contains, then these parts must change, nearly or quite as many times, in order to suit the capacity of their covering. Look at the hands and feet of the infant and of the full-grown man, and consider with how many new pairs of each he must have been furnished, for all the intermediate sizes!

But this is not all. It is supposed that every exertion of a muscle is attended by an actual loss of a portion of its substance. In the adult state, when we retain substantially the same weight from year to year, the old material which is lost is replaced only by an equal quantity of new. But during the season of growth, not only the material which is lost must be replaced, but such an additional quantity must be added as will increase the mass or weight of the individual from day to day. Perhaps this presents to us a better idea than anything else can, of the changes from old to new, which are constantly going on in a healthy body. We see it with our eyes in regard to the nails and hair. The whole of the finger nails are changed several times a year, at least; and the hair grows far more rapidly than the nails. The particles incorporated into our system are not designed to last long, but the beauty of the operation is that the used-up portions are skilfully taken out, one after another, and new ones, larger, stronger and better, substituted for them. No healthy person consists of precisely the same particles for any two successive days.

How infinitely superior is this to any specimen of human workmanship! If we cause friction in any part of a machine, as in the iron band or tire of a wheel, for instance, it wears away and is gone. Not so with the hand or the foot, or any

part of the body,—for, when friction wears away any part of these, they contain within themselves a repairing energy,—a constructive faculty,—the power not only of replacing what is lost, but of thickening and hardening the exposed part. Were there any such self-protecting ability in a wooden wheel, then, when its circumference should begin to wear away, it would, of its own vital efficiency, prepare and deposit a rim of iron to protect the wood, and if this too were in danger of being ground off, it would then defend itself by one of steel or platinum.

What a wonderful invention should we deem it to be, if a shipwright could discover some mode by which, whenever decay or dry-rot should attack the innermost timber of his vessel, that vessel should be endued with the power of seizing the unsound atom, and of hurrying it along from point to point, until, at last, it should be thrown out into the sea; and, in the mean time, a sound particle should be seen winding its way among thick layers of iron and wood, changing its course, if need were, to avoid obstacles, though always holding on steadfast in the same general direction, until, at last, it should settle down in the precise place from which its predecessor had been ejected, whether that place were at the bottom of the keel, or at the top of the mast! And the wonder would be immeasurably increased if the new particles, while they imitated the shape, should exceed the size of their predecessors, and the process should be repeated again and again, until a pleasure-boat became a steamship, or a man of war. Yet a process exactly like this is going on, every moment, in the body of every healthy child, and with greater rapidity and frequency in proportion to the degree of health enjoyed.

This is not mere curious speculation. These facts have the greatest practical significancy. The change of material in the body is almost exactly proportioned to the quantity of pure air breathed, and to the amount of healthy exercise taken,—because on these mainly depends the assimilation of the food. Without such change of matter, there cannot be any healthy growth; and hence the small bones and loose flesh,—as soft and puffy as though it were wind-swollen,—of those children who are delicately reared. Such children cannot have elastic, bounding muscles; for theirs are the old, musty, flaccid muscles whose material ought to have been renewed months ago. They cannot have bright eyes and roseate cheeks; for the old, defaced lenses of the eye are still in use, and strong exercise in the open air has never projected the blood outward to fill the vessels of the true skin with the hues of beauty and the glow of health. In regard to those young men who have suffered the misfortune of a luxurious domestic training, who have been taught to disdain labor, and have hardly been allowed to wash their own faces, or tie their own shoes, it is often alleged as an excuse for their inaptitude, their want of dexterity and resource, in the emergencies of life, that they have never been accustomed or disciplined to contrive and to think, in the adaptation of means to ends, or in tracing relations between causes and effects. But

this is far from being all. Their imbecility does not come merely from a want of practice, but from their being obliged to use an old brain, the substance of which ought to have been renovated,—all its fibres taken up and relaid,—many times, by vigorous exercises, and by a responsible application to some department of business. In such persons the half-decayed nerves have become almost non-conductors of volition; and the brain, through the want of a renewal of its substance, is too loose and spongy for the manifestation of thought. This organ, too, like all other parts of the body, being dependent upon these changes for its growth, must be *small*, as well as lifeless, without them; or its growth will be more in the animal, than in the intellectual and moral region.

[To be continued.]

NORMAL SCHOOLS.

The recent movements in various parts of the country, in the direction of a fuller and better preparation of teachers for the Common Schools, naturally draws our attention to those institutions in which the teachers are to be instructed. There have not yet been established amongst us Normal Schools of the highest kind, such as will be demanded when the claims of the profession of teaching come to be fully recognised.

The only question now usually asked, in reference to the qualifications of a teacher in the highest seminaries, is,—What is he as a scholar? If he is a good one, it is taken for granted that he is qualified to be a teacher. This is a great and often a fatal mistake. We venture to say that the students of every college in America are at this moment suffering from this mistake. The unquestionable fact is, that a man may be a thorough mathematician, and yet have no faculty of communicating what he knows, and therefore be a very poor teacher. He may be richly furnished in all the various learning which goes to form an accomplished classical scholar, and yet be totally unsuccessful as a teacher; he may want the power of interesting, of making clear and delightful what he knows. He may be a profound naturalist, familiar with the form and history and properties of every plant about him, and the structure and habits of every animal, so that he might write an able commentary upon a chapter in Cuvier, or a section in Decandolle, and yet may so utterly fail in the power of bringing out these stores in their fresh beauty, that his hearers shall go to sleep in his presence. We have heard of a professor of natural philosophy so lamentably destitute of the gift of speech, that he dared not utter a word, even with an air-pump before him, unless he had his notes in his hand. We have heard too of a professor of ethics, who was deeply versed in all the questions that have embarrassed metaphysical heads, but whose soul was so dead that his tediousness was equal to his learning. Everybody interested in the realities of moral science will be willing to

confess that such a teacher is worse than none. He does what he can to make the whole subject of moral and metaphysical reasoning distasteful. He does not merely let the moral faculty sleep, he kills it.

These are not fancy sketches; they are pictures; and our educated readers, if they do not recognise the originals, will doubtless be able to call up those who might have sat for the portraits.

It is time that such mistakes should cease. It is time that every one, who has the appointment of a teacher to make, should know that, besides the question, "Is he a good scholar?" there is another to be asked, no less important;—"Can he teach well what he knows?" If either of these is the more important, it is the latter. If a man has no skill in teaching, all the learning in the world will not make him a good professor; if he has great skill as a teacher, very moderate attainments may make him very useful. The greatest and most original teacher of modern times, Pestalozzi, was not a man of remarkable learning, or of much power, except as a teacher.

Teaching is an art. Like the other arts, it rests upon definite and fixed principles. Many of these are already understood, and may be distinctly laid down. Some, probably many of them, are yet to be ascertained,—to be inferred from the laws of the human mind and from the philosophy of the sciences, arts and literatures which come within the province of teaching. The body of these principles will be the *science of teaching*. Resting upon the laws of mind, and upon the great relations of physical, historical and ethical truths to these laws, it will necessarily embrace logic, and rhetoric, and whatever is settled of metaphysics. It will be, and will be considered, the highest of the sciences. It will be the Primal Philosophy, taking the same rank among the moral sciences that geology has already taken among the natural. It will be the province of the highest professor in the Normal College for the education of professors, when the *first* question in regard to a candidate shall be,—"What is his skill in teaching?" Does he so completely grasp the truths of the science he professes, and their relation to mind in its various states of progress, that he shall be able fully and clearly to unfold those truths, and bring them home, by familiar and apposite illustrations, to the easy comprehension of the learner?

The time has not yet come, though come it surely will, for a Normal School of this comprehensive character. As yet, these schools are established in this country only for the qualification of teachers of the Common Schools. It is with such that we have to do; and it is in reference to these, and these only, that the following suggestions are offered. What shall they be? What shall they aim at? How shall they endeavor to reach what they aim at?—are questions of the utmost moment.

The first of these questions is solving itself in various parts of the country, and, as should be the case, the solution is guided by the wants of the people. Where the profession of teacher

can become a permanent one, a broad foundation should be laid. Special training, continued year after year, for at least two or three years, is in this case necessary. Without this, the life of a teacher, if he aims at being faithful and efficient, will be too laborious for ordinary strength. The teachers now on the stage, who have toiled alone, with painful and devious steps, through the difficulties which have beset us, are prepared to appreciate such advantages. The thoroughly qualified teacher will live an incomparably easier life. He will begin with the satisfaction of feeling that he is not groping his way in the dark. He has some rules to go by; methods of teaching, that have been tested, to follow; principles of reason, drawn from experience, to guide him. He will not find the work all done to his hand; for there are points on which the best methods have not yet been found out, or, if they have been, they have not yet been made public. He will still, therefore, find exercise for his utmost ingenuity in perfecting methods of teaching and governing, and in devising new ones. But he will begin with enough of well-established theory to render his path easy and pleasant. His life will not need to be anxious. He may sleep quietly, for he will know one good way already, though it may not be the best.

Where most of the schools are kept open for only a portion of the year, and where the teacher must therefore resort to some other employment for a part of the time, he will not be able to devote years to the express work of preparation. To meet this exigency, Normal Schools must be established, in which the course of instruction shall be limited to certain months of each year. Such schools must succeed, for they are what the condition of the country absolutely requires. And they have succeeded. In Ohio, in New York, and in other states less fully, the experiment has been tried. It has been successful; it could hardly be otherwise. A teacher, who spends six or ten weeks, in the autumn, under the eye of an energetic and experienced master,—sees him manage, arrange and direct; hears him explain; learns from him what should be taken first and what next; what should be insisted upon, and what passed over slightly; by what kindness obstinacy may be bent, and by what gentleness violence may be softened,—will go into the winter's school a different man from him who comes fresh from the anvil or the cornfield. If he is of a ready and quick comprehension, he will often succeed in catching the spirit of excellent methods, and will himself work out from his own experience an answer to many questions which will have suggested themselves as he looked on. If he is of a generous character, he will penetrate the truth that when things go wrong it is oftener the master's fault than the children's, and he will learn the lesson of self-control and self-culture. Such will be the effects under a good teacher. Even under an ordinary one they cannot be bad. Forty men, having most of them some little experience, and meeting in earnest for the very purpose of finding out the best modes of managing the affairs of a school, cannot fail to learn a good deal from each other, even if their

teacher serves only as a permanent chairman. But where he is of the true stamp,—a man of resources, and of talent to infuse his spirit into others,—it is not easy to limit the amount he may accomplish even in a few weeks. At best, however, the limitation of time must be looked upon as an evil. If something can be done in eight weeks, five times as much can be done in forty.

To the second question in regard to Normal Schools,—What should they aim at?—we have a ready answer. They should doubtless aim at making the utmost possible good come out from the Common Schools as they now exist. They should endeavor to give the best possible qualifications to the teachers of the Common Schools, such as they now are, and such as, for want of better, must for the present be employed. But how is this to be done?

Whether the regularly established Normal School, acting from year to year, as in Massachusetts, is to be the agent, or the periodical, holding its sessions twice a year,—in spring for the teachers of the summer schools, in autumn for those of the winter,—or, the least efficient of the three, the appendix to the established academy; or whether the work is to be left to teachers meeting in convention, as at the Teachers' Association in Essex county, Massachusetts; or to the unaided efforts of the solitary teacher, seeking for aid in books and meditation,—the three paramount objects to be striven for, are, we think, the following:

1. The first is to be able to teach the common branches, reading, writing, arithmetic, geography and grammar, as well as they can be taught;
2. To communicate, while doing this, valuable information, and to bring the various powers of the mind into action;
3. To give elevation and energy to the character, so that its whole influence, direct and indirect, shall be constantly good.

Of the common branches, far the most difficult is reading. To teach it well, is to be an accomplished teacher. It requires a good, clear voice; a power and habit of exact articulation; correct pronunciation; a quick eye; a ready understanding; and sympathy with the different passions and emotions. A good voice is a gift of nature, a marked deficiency in which should be considered an absolute disqualification. A weak voice may be strengthened, a harsh one may be somewhat softened, and the compass and richness of an ordinary one may be enlarged and improved by well-directed practice. But one incapable of uttering all the sounds of the language should not be employed to teach.

The most important element in reading is articulation. The Normal School teacher will insist upon his pupils being thoroughly drilled in all the elementary sounds,—not the letters, but the sounds without them,—and all the difficult combinations of sounds, and that they be familiar with the modes of forming in children habits of distinct enunciation. Pronunciation may be gradually acquired. No one can pronounce perfectly well who has not kept good company or received

excellent instruction. But it is not all-essential. If a person says, *dahnce*, instead of *dăn̆ce*, or *ketch*, instead of *catch*, there is no great harm in it. It but tells the innocent truth that he has not been very carefully educated. Not so with bad habits of enunciation. The prevalence of these in some parts of this country is making our language barbarous.

The training of the eye, the understanding and the power of sympathy, will be the gradual, sure accompaniment of a good education of the intellectual and moral powers. Little can be done towards it in a few weeks' instruction. A *perfectly* good reader must be a highly educated person.

In regard to spelling, the most important office of the Normal School teacher is to point out the danger of pernicious habits of mind from the common modes of teaching it, and to show that it should always be combined with some exercise in writing or reading. The truth will probably soon be acknowledged, that all the time spent upon the nonsense syllables and nonsense columns of the spelling-book is worse than wasted. We learn to spell only that we may write. If a person could spell, orally, all the words in the language, it would be of no use to him, *unless each word, when presented to his eye, suggested some thought or feeling to his mind.* We have no doubt that it would be better if all the exercises in spelling, in all schools, were abolished, except so far as they were at the same time exercises in reading or writing intelligible sentences.

Writing is a mechanical art; and persons often write extremely well who can do nothing else. Still there are good methods in this, as in every other department, and these should be pointed out, on the black-board, to the teacher.

The most decided improvement that has been made in teaching, within the present century, not even excepting the use of the black-board, is the introduction of mental arithmetic. Every teacher should learn how to drill a class in this, he having the only book. It is the best possible introduction to written arithmetic. But this is not its only or best use. No other study, probably, affords such excellent means of cultivating habits of attention, of orderly thought, and of continued and ingenious combination. We speak here only of the effect of using Colburn's First Lessons. There may possibly be other books on the subject to compare with this, but we know of none.

One or two good modes of teaching mere geography should be pointed out; such as by map-questions, by outline maps, and by drawing maps, either copies or from memory. We think, however, that geography should not be taught by itself; but that, in connection with it, much should be given,—as much as the teacher knows how to communicate,—of geology, natural history, antiquities and civil history. These things are better than clear gain. The geographical facts wherewith they are connected, are thereby more deeply imprinted on the memory. And if such things are not associated with them, the question must be continually coming up to the mind, if not to the lips, of the learner,—What is the use of all this? And indeed what *is* the use of knowing the latitude of a place in Africa, or Asia,

unless with reference to the animal or vegetable productions, and the consequent facilities and modes of subsistence, which belong to that climate? Of what use to fix in the memory the position of Rome, unless something is known of what Rome was and is? Why learn the place of Wittenberg, on the map of Germany, if not for its association with Luther and the Reformation?

There is no branch, except spelling, on which so much time is usually wasted as on grammar. A rational mode of teaching it should therefore be one of the prominent objects of Normal instruction. The first principles should be taught orally and by the black-board and slate. So taught, they are easy and pleasant, and throw valuable light upon the arts of reading and composition. As taught by the text-book, grammar is commonly embarrassing and obscure from beginning to end. The use of the black-board is very important. To take a common instance of a violation of a rule of syntax;—It is her. The two sentences written in a distinct character on the black-board,

It is she, *not* It is her;

will give the truth in the best form, and if the pupils are required to make for themselves, and write on their slates, ten examples of similar mistakes, and their corrections, the rule is learnt better than by months of repeating the rule in parsing, where the mind is little better than passive.

2. The second object of Normal instruction should be to show how to communicate, while teaching the primary branches above mentioned, valuable information upon important subjects of business and life. The most essential of these are,—1. The laws of the structure and health of the body, and thence of the mind; 2. Accounts and the principles of rational economy; 3. Civil and political relations and duties. For this purpose three short courses of conversational lectures might be given, on these several heads. For the course upon physiology, Combe's Physiology, Hayward's, and Mr. Mann's last Report, would be sufficient to give all the necessary materials; or, as a substitute for lectures, the first or last of these might be read or recited by the classes.

For the second course, it would be necessary to have some short system of book-keeping, with forms for the usual papers employed in ordinary transactions; and such a book as Miss Beecher's Domestic Economy, would suggest, on the various heads, something suitable for the instruction of both sexes.

For the third, some good writer upon the Constitution, like Story, and some one who gave an account of the organization and proceedings of our courts of justice, like Sullivan, would furnish as much as could be conveniently communicated or would be perhaps desirable.

The next thing would be to show the future teacher how information on these topics can be communicated to the classes in connection with their other studies. A few instances will suffice to give an idea of this.

Most of the text-books on geography give a sketch of the government of the United States, and of each state, just long

enough to be unintelligible to children, without an explanation. One of the best* has a sentence of this kind: "In the courts of the United States are tried all matters in which the United States are a party." Here the teacher should explain what a court is, of whom it consists, how a cause is tried, what is meant by *the parties*, what the jury is, how constituted, what its duty is, what is the duty of the judge, and what are the duties of the executive officers of a state in reference to a trial.

In every reading book there are passages in which mention is made of the consumption. The teacher may take occasion, in speaking of such a passage, to explain what kind of disease consumption is, and the fact that it is often brought on by exposing the feet, insufficiently clad, to the cold, or by want of cleanliness in the skin. He may then explain the offices of the skin, and the importance of keeping the lower extremities always warm. A multitude of other cases might, if it were not superfluous, be suggested.

Much of accounts may be taught by taking pains to select, as examples of the various arithmetical principles, cases from real occurrences in business, instead of those with vast, inconceivable numbers, which are so often given in the books.

3. What we enumerated as the third, will be far the most important and difficult part of Normal instruction, viz., to communicate such elevation and energy to the character of the future teacher, that his whole influence, direct and indirect, shall be constantly good. The fact will immediately present itself to a sagacious judge of qualifications, that there are many persons who are incapable of this elevation of character; and a most responsible part of the Normal teacher's office will be to persuade such persons, frankly, to leave or never to assume the vocation of teacher. The tone of feeling amongst the schools needs to be raised; and how can this be done, if sluggish and indolent persons, of a low and grovelling character, self-seekers, of slow sympathies and faithless consciences, are encouraged or allowed to enter upon the high office of teacher? How can they infuse energy into schools of children, who have it not themselves? Or how can the man of a selfish, malignant or hypocritical spirit, breathe into the souls of children, a pure, lofty and generous character? And these are the qualities which are most needed. It is not by making children mere readers, geographers and calculators, that the body of teachers are to be a great blessing to the country;—but by making them worthy citizens, good neighbors, and just and noble-spirited men. And this they cannot do unless they are such themselves.

Much of the rough material which presents itself is to be rejected. The surveyor of lumber would show himself faithless who did not throw aside, as unfit for the merchant, unfit for the house-builder or ship-carpenter, many pieces which are offered in the market. Shall the approver of teachers be less faithful? If all the trees of the forest are not fitting materials whereof to build habitations for the perishable body, shall we judge that all men who offer themselves,—the unsound of head, the rotten

* Hale's Geography.

of heart,—are, equally with the clear-headed and high-souled, worthy to be formers and guides of the never-perishing spirit?

We repeat it, one of the most solemn duties of the Normal school teacher, as of the inspector of schools, is to remove, when possible, from the office of teacher, those who are not by nature qualified to assume it. And one of the effects which we hope to see produced by the prevalence of a more just tone of feeling and thinking upon the subject of teaching, will be to convince the enlightened part of the public that there are many, now holding the office of teacher, who are not fit for it, and could not be made fit.

When the incompetent are thus set aside, it remains to inspire those who are left with the spirit becoming their office. It is not easy to give specific directions for accomplishing this highest work of the Normal teacher. It may, indeed, be deemed presumptuous in any one to undertake to say what is the highest end, much more to point out the path to attain it. But it is not so. We are not left in the dark in regard to this matter. A light from Heaven has been thrown upon it, and we are permitted to walk in the light. In the humble follower of the Saviour *it is not* presumptuous to say that he has been taught what is the great end to aim at. The highest object of the Christian is the highest object of the Christian teacher. Our great object then should be the perfection of our own character and of the character of our pupils. I am not at liberty to presume that I have a more comprehensive understanding of the words of the Saviour than he had himself; I cannot, therefore, but conclude that when he commanded me to be perfect even as my Father in heaven is perfect, he meant to include perfection in regard to every point in my character, the intellectual and physical as well as the spiritual. And when he constantly connects teaching with doing, I cannot but think that he, who is my model in teaching as well as in everything else, intended that this should be my object in teaching.

But it may be objected that to say that our object is the perfection of the character is to speak very vaguely. The idea of what constitutes the perfection of character may be different with every different individual.

To speak more definitely, then, my idea of the perfection of the character is, that every faculty should be developed and exercised, and that the spiritual and moral part of our nature should be made to have preëminence over the intellectual and the animal. I would constantly assert this preëminence, and to establish it should be an object of which I would never lose sight. This should be the ultimate end towards which my exertions should always tend. The highest perfection of the animal nature should be only a means of advancing the intellectual and moral; and the highest perfection of the intellectual, only a means of advancing the moral and spiritual.

This should be the guiding principle of our whole course. Everywhere we should beware of mistaking the means for the end. If, for example, it were our object to make a perfectly good reader, the question would immediately come up, what is a

perfectly good reader? And if it were possible to have given the most perfect enunciation, a faultless utterance, entire control of the voice, and a graceful delivery and action, and yet we should find, upon inquiry, that to attain these, the pupil had been directing his whole attention to the sounds of words and the framework of sentences, and had not been occupied with the thoughts and feelings of the passage read, or had failed to get a strong desire to know more of the author; I should without hesitation say that this apparent success was partial failure. It would have been mistaking words and sentences for the mind and soul of the author, which should have been seen and felt through them.

So, if the object in view were to make a good arithmetician and accountant, and a lad were brought forward who could, without hesitation, solve all the questions in the text-book, and yet, when a new question was proposed, we found he had first to stop and inquire under what rule it was to be considered, and he could not solve it until that was settled; we must again conclude that our true object had not been attained; which should have been to put him in possession of principles, so that he might dispense with rules.

Cases not unfrequently occur, similar to one which recently presented itself. A girl, who had been some years at a school deservedly high in some respects, and who had been much distinguished for parsing, which made an important part of the exercises of the school, objected to a new one to which she was sent, that "she did not like her new school, 'cause they had not got no parsin' in it." Probably few intelligent persons would hesitate to say that, so far as English Grammar was concerned, her years of parsing had been time entirely thrown away.

These are instances of apparent success, but of real failure, from mistaking the end which should have been kept in view. But, to take still higher ground, the object should not be to make even really good readers or arithmeticians or grammarians, if it must be done at the expense of any injury to the moral character. This must not be sacrificed; it must not be perilled. To preserve or render it pure, and to raise it to a still higher tone, should be an object paramount to all other considerations. Good scholarship is of secondary importance. If purchased at the expense of truthfulness, generosity, justice, or kindness, it is bought at too high a price. If the desire of being a good scholar, or of gaining the reputation of one, must lead a boy to falsehood, or prevarication, or to anything else mean or ungenerous, he had better be without that desire. If the struggle for preëminence makes children malicious or envious, or has that tendency, the struggle should be prevented. If the offer of a prize awakens sordid desires, the prize should not be offered.

It should be an object of anxious attention to the teacher, and especially to the Normal Teacher, to study the effect upon the character of the various motives to effort, which may be brought to bear upon learners. It is possible, certainly, that some of those usually appealed to, do not have a beneficial effect. The love of praise, of distinction, and of selfish advancement, and the

fear of pain, of shame, and of disgrace, may, to say the least, be sometimes unduly excited. In all such cases, some other motive ought to be substituted. It is surely safe to say that in all cases where one motive has a bad or doubtful effect, some other *may* be substituted. There *must* be true, right and natural motives to be appealed to, of sufficient force to bring into action all the faculties of the mind fully, harmoniously and powerfully. It is a reflection upon the wisdom of the Author of our nature,—a reflection full of irreverence,—to declare or to suppose that any one part of our nature is to be sacrificed to the welfare or advancement of any other part. The admirable structure of our body, mind and spirit,—the more admirable the more it is understood,—forbids such a supposition. It is the business therefore of the philosophical and Christian teacher to study this complex structure, to investigate the nature and laws of the various powers and faculties, and their mode of action on each other, that he may be able to discover the best and wisest motives, and the means of bringing them into operation.

The extremes to be avoided are, on the one hand, the leaving the mind in listlessness and inactivity; on the other, the exposing to injury, by inordinate or misdirected application, the health of the physical frame or of the moral. Within these extremes, there is room for all the resources of the teacher's art.

These resources are to be extended. An improved philosophy of the mind cannot fail to suggest new modes of developing and cultivating the faculties. More extensive knowledge of physiology and the laws of health will make the importance of observing these laws more evident, and the means of avoiding their infringement more easy. The spirit of Christianity must, more faithfully than heretofore, be brought to bear upon the whole treatment of children from the beginning to the end of their education. It has been often said, as an apology for continuing the use of flogging, of prizes, and of emulation and contests for place, as motives to exertion, that we must take human nature as it is. The teacher must take care to know *what* it is; he is not to take it for what it has been thought to be; for terrible mistakes have been made. And if, in any particular case, he takes human nature as he finds it, he must not leave it so; his business is to improve the natural character and condition of every human creature over whom he has influence.

Questions to be considered then are such as the following, viz.: May not the several objects of human knowledge be so presented to the mind of learners as to excite, naturally and sufficiently, those faculties of the mind which are employed in their investigation? Are not, for example, the branches of natural history sufficiently interesting in themselves to stimulate the powers of observation? Are not arithmetic and geometry attractive enough, when properly presented to the mind, to occupy the faculties of calculation and of form? Stories are universally pleasing to children; may not histories,—which are only stories of greater length and on higher subjects,—be made equally so? When they fail to be, is not the fault in the narrative, and not in the child? May not natural philosophy and astronomy, chemistry and geology, and the other sciences which investi-

gate the phenomena and laws of the creation, be so addressed to those faculties whose objects are the nature and causes of things, as to excite them sufficiently without the aid of emulation or prizes, or anything else extrinsic? Are not the motives suggested and approved by the Gospel of Jesus Christ, sufficient for the formation of the highest human character? Or are we to look back, from the Gospel, to the instruction of the Heathen or of the Jews?

Possibly these and similar questions must, after all, be answered in the negative. Is it proper or philosophical to give that answer, in regard to all of them, before experiments have been fairly tried? I say in regard to all of them, because it is a notorious fact that in many schools and colleges, the system of emulation, of rewards, of places and prizes, is made to apply to the whole course of studies; thereby taking it for granted, that these questionable motives alone are capable, in any of these cases, of bringing the minds of students to that vigorous action which is necessary to their success.

Such are some of the questions which, it seemed to me, should be presented to the mind of the teacher, to rouse his energies and to give a loftier aim to his views. The field of elementary instruction is to be laid before him. He is to question severely whatever is new or old, and neither to adopt nor reject on slight grounds or without a fair trial. All the processes and methods of learning, teaching and governing, now in use, are to be tried over again on their own merits, and to be condemned and abolished when better ones can be found to take their place.

We are aware that there are many subjects, of the greatest interest to the Normal teacher, on which we have not touched. But we have already extended our remarks far beyond our original intention.

A Farewell.—Before the appearance of the next number of this Journal, perhaps, indeed, before these paragraphs shall have reached our readers, the Editor will have returned, and we shall be able to surrender our temporary trust into his hands. We shall do it joyfully; for we know that it will be a great relief to our readers. On their account, on his, and on our own, we shall cordially welcome him back to his native land, and to this pleasant and honorable field of his labors. May his success in it be equal to the zeal and energy with which he consecrates himself to his noble work. G. B. E.

Normal School at Bridgewater.—The next term of this School begins on Wednesday, the 6th day of December, 1843, at which time applicants for admission will undergo an examination in Reading, Writing, Spelling, Grammar, Arithmetic, and Geography.

Those who enter the School are required to do so with the intention of remaining at least two terms, which, however, need not be successive.

Each pupil must bring a certificate of intellectual ability, and good moral habits. Males must be at least 17 and females at least 16 years of age. For further particulars inquire at the School, or at the office of this Journal.

N. Tillinghast, *Principal*

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